LIVERMORE LAB
REPORT

A weekly review of scientific and technological achievements from Lawrence Livermore National Laboratory, Aug. 1-5, 2011

CNBC | INNOVATION CONVERSATION

Director George Miller sat down for an interview with CNBC's Jon Fortt to discuss Lab capabilities.

LLNL Director George Miller recently joined leaders of local corporations in a special Innovation Forum sponsored by the Livermore Chamber of Commerce.

The panel discussed ways to grow a healthier economy, whether it be for Livermore, the Tri-Valley and greater Bay Area, the state or nation. CNBC technology correspondent Jon Fortt served as moderator.

Throughout the discussion, panelists emphasized the need to grow the nation's manufacturing capabilities, maintain a stronger education system -- including higher education, particularly in California -- grow the nation's wealth and find ways to make it more attractive for businesses to stay in California.

In addition to Miller, panelists included John Chen, chairman and CEO of Sybase, Inc.; S. Shariq Yosufzai, vice president of Chevron Corporation and chair of the California Chamber Board of Directors; Rob Lampkin, CEO, Cool Earth Solar; and John Dulchinos, president and CEO of Adept Technology.

Miller pointed out that Lab technologies produced $425 million in the U.S. economy in the previous year alone.

In a one-on-one interview with Fortt following the panel, Miller discussed how the Lab's high performance computing capabilities can support industry, the Livermore Valley Open Campus and LLNL efforts to collaborate with outside industry and academia, and the National Ignition Facility and its experiments in fusion energy. (See story below.)

San Francisco Business Times

LABS SHARE 'OPEN CAMPUS'

Inside the Livermore Valley Open Campus facility.

Lawrence Livermore and nearby Sandia national labs are developing a campus where they can share a reserach and development space.

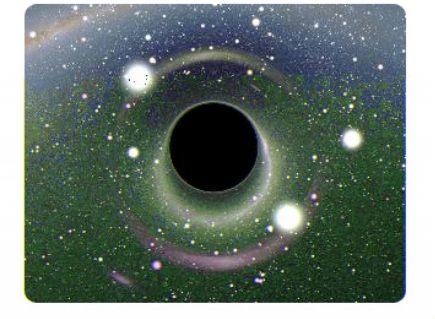
The collaboration, part of the Livermore Valley Open Campus project and now in its early stages, will allow the labs to release unclassified research and facilitate associations with industries, academia and other government agencies.

The first step in the project was the recent opening of a 12,000 square foot High Performance Computing Innovation Center.

To read more, go to the Web.

Scientific American™

IS THERE A HOLE IN THE BLACK HOLE MODEL?



George Chapline, a theoretical physicist at the Laboratory, argues that a recent event lends support to a heretical idea: black holes do not exist.

On March 28, the Swift Burst Alert Telescope detected a gamma-ray event that, in contrast with any previously observed gamma-ray burst, remained bright and highly variable for 48 hours.

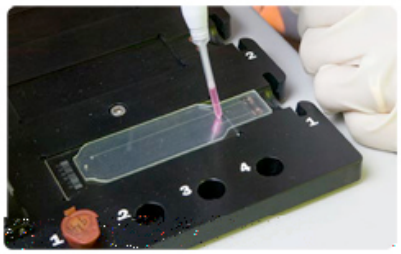
Astrophysicists attributed this event to the tidal disruption of a star by a black hole in the center of a distant galaxy.

But, Chapline argues, it would have been more accurate to describe this event as the tidal disruption of a star by a compact object.

He notes this distinction is important because the black-hole model has serious problems.

Chapline led the team that demonstrated the first working X-ray laser, developed the concept of a "gossamer metal," and has contributed to string theory.

To read Chapline's article "Maybe Black Holes Don't Really Exist," scroll down the page on the Web.



The Lawrence Livermore Microbial Detection Array (LLMDA).

Research scientists at Lawrence Livermore National Lab have developed a technology that will be able to detect and identify many types of organisms -- viruses, bacteria, fungi, and protozoa -- within 24 hours.

Called the Lawrence Livermore Microbial Detection Array (LLMDA), the detector contains 388,000 probes that can screen for more than 2,000 viruses and 900 bacteria.

And, what's more, the device can be expanded to include all known microorganisms of interest.

Currently, Tom Slezak, LLNL's associate program leader for Informatics, and his team, are testing a next-generation LLMDA that will contain 2.1 million probes, representing some 178,000 viral sequences from 5,700 viruses, and about 785,000 bacterial sequences from thousands of bacteria.

To read more, go to the Web.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

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